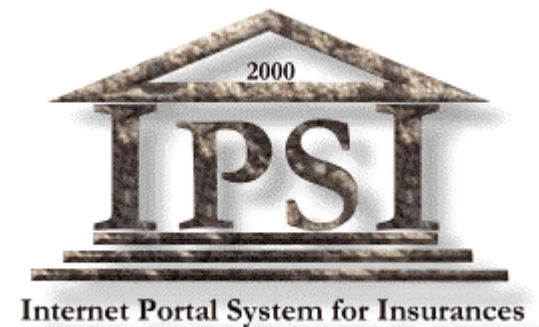




# A Software Development Process for an Electronic Commerce Portal

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# Conventional vs. EC Systems

- Development conditions of EC systems:
  - higher degree of interaction
  - higher degree of integration
  - more content in addition to functionality
  - shorter time-to-market
  - *but same level of quality*
- Adapted software development process for EC systems required



# A Portal for Insurance Agents

- combines and integrates
  - content and applications to support the agents' work
- to increase
  - productivity, company loyalty
- built using an adapted software development process

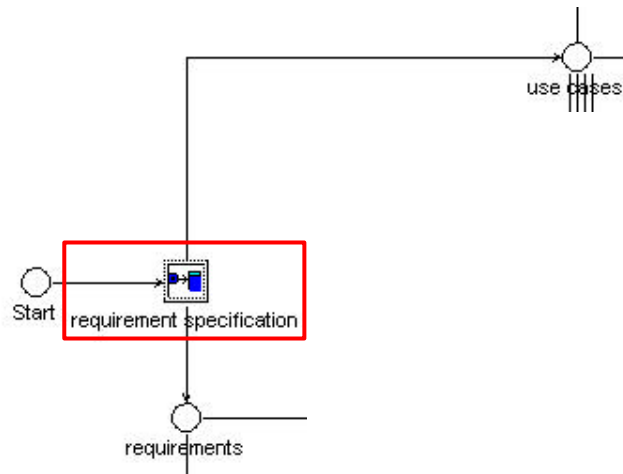


## Subprocess Model





# Software Process Model

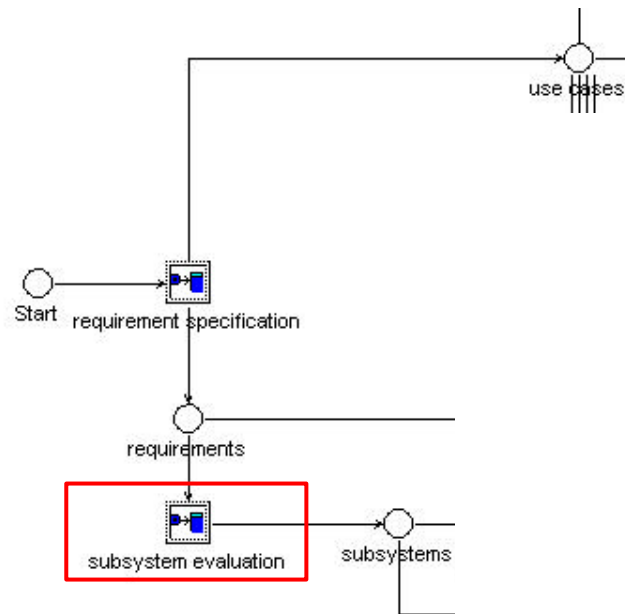


# Requirements Specification






- cooperation with insurance companies
- comprehensive tasks → singular actions
- prioritized and documented:

Req ID	Requirement	Priority	Type	Rationale
EP-F/1.2.3	All shop items must be accessible via a product hierarchy.	1	MUST	Users are familiar with the concept of a hierarchy and can find items there easily.
EP-F/1.2.4	A full text search may be provided to find products.	3	MAY	The search facility serves as a backup in case the user can't find an item in the hierarchy.

# Software Process Model

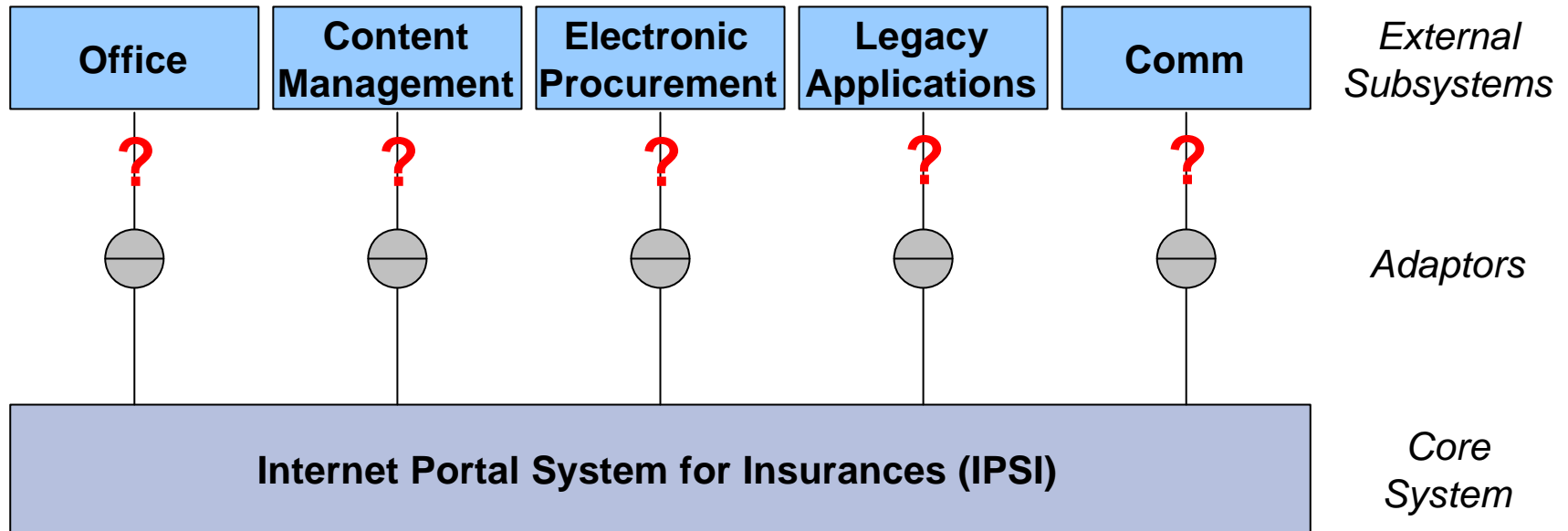


# Subsystem Identification

Office	Content Management	Electronic Procurement	Legacy Applications	Comm	Admin
e-Mail Folders	Product Portfolio	Office Material (Toner, ...)	Partner Database	Sending Reminders, Messages, etc.	User Management
Address Book	Company Handbook	Promotional Material (Flyers, ...)	Contracts Database	by Fax	Monitoring
Calendar	Marketing Information	Company Services (Courses, ...)	Tariff Computer	SMS	<b>Search</b>  Portal-wide Full Text Searches
To-Do List	Law Documents			e-Mail	
<i>Outlook</i>	<i>pirobase</i>	<i>SmartStore</i>	<i>Partner DB</i>	<i>sendfax, yaps, JavaMail</i>	
					

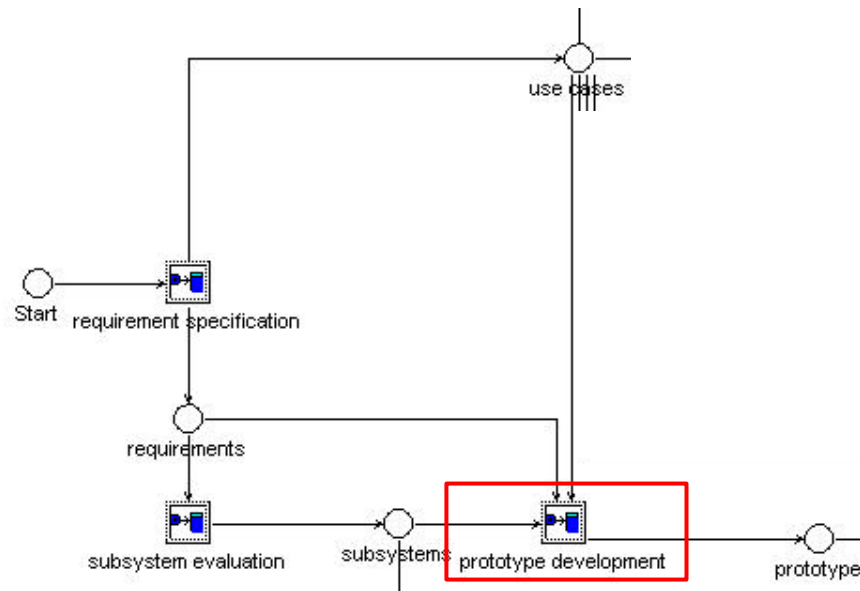


# Feasibility Check

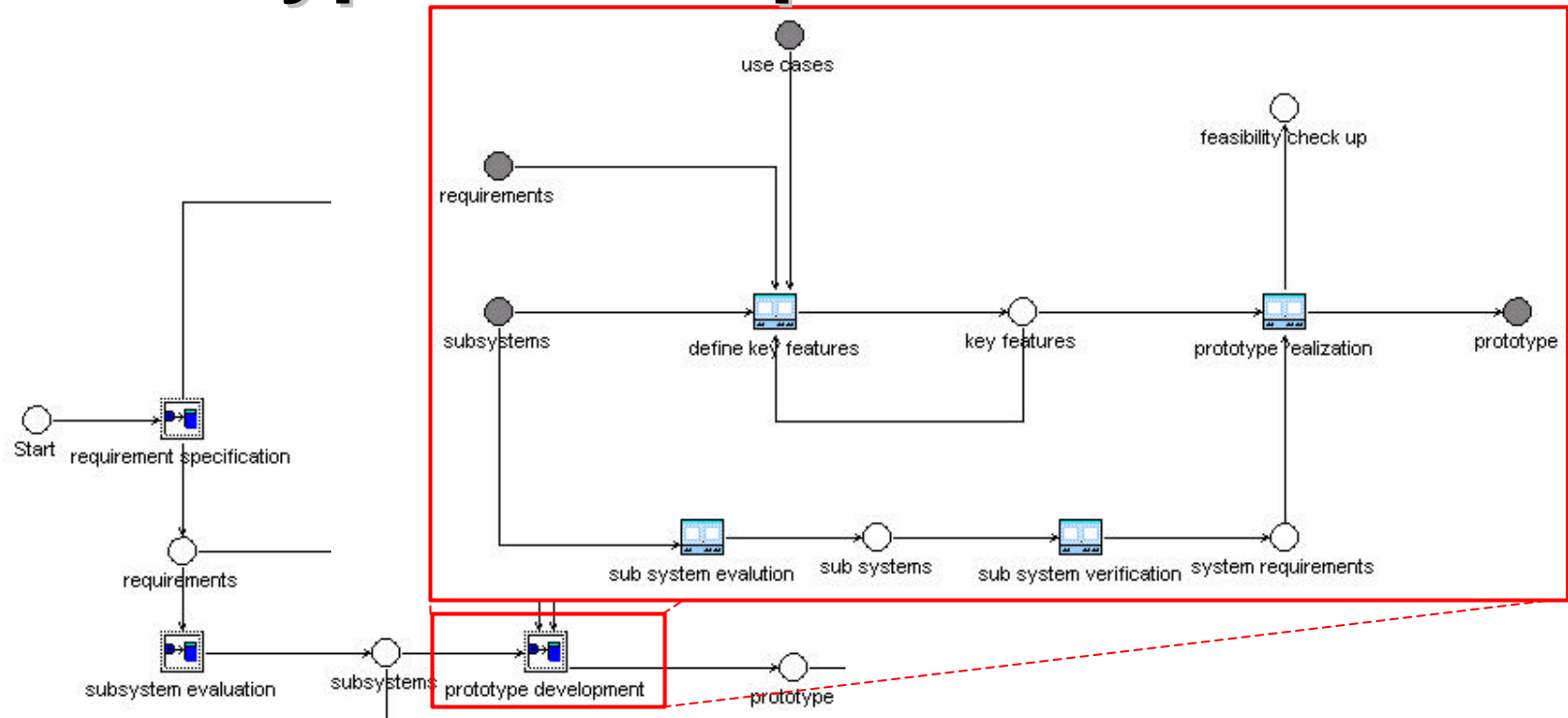


- Q: Subsystem integration feasible?
- A: Adaptor prototypes implementing key features

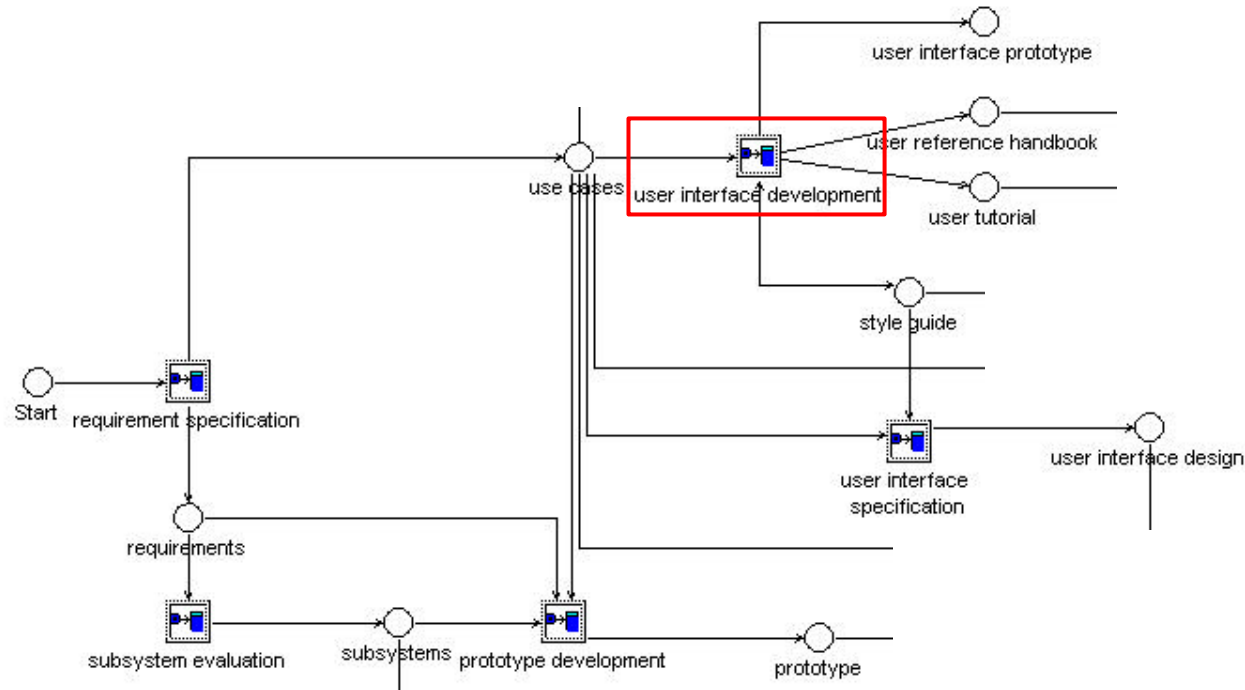
# Software Process Model



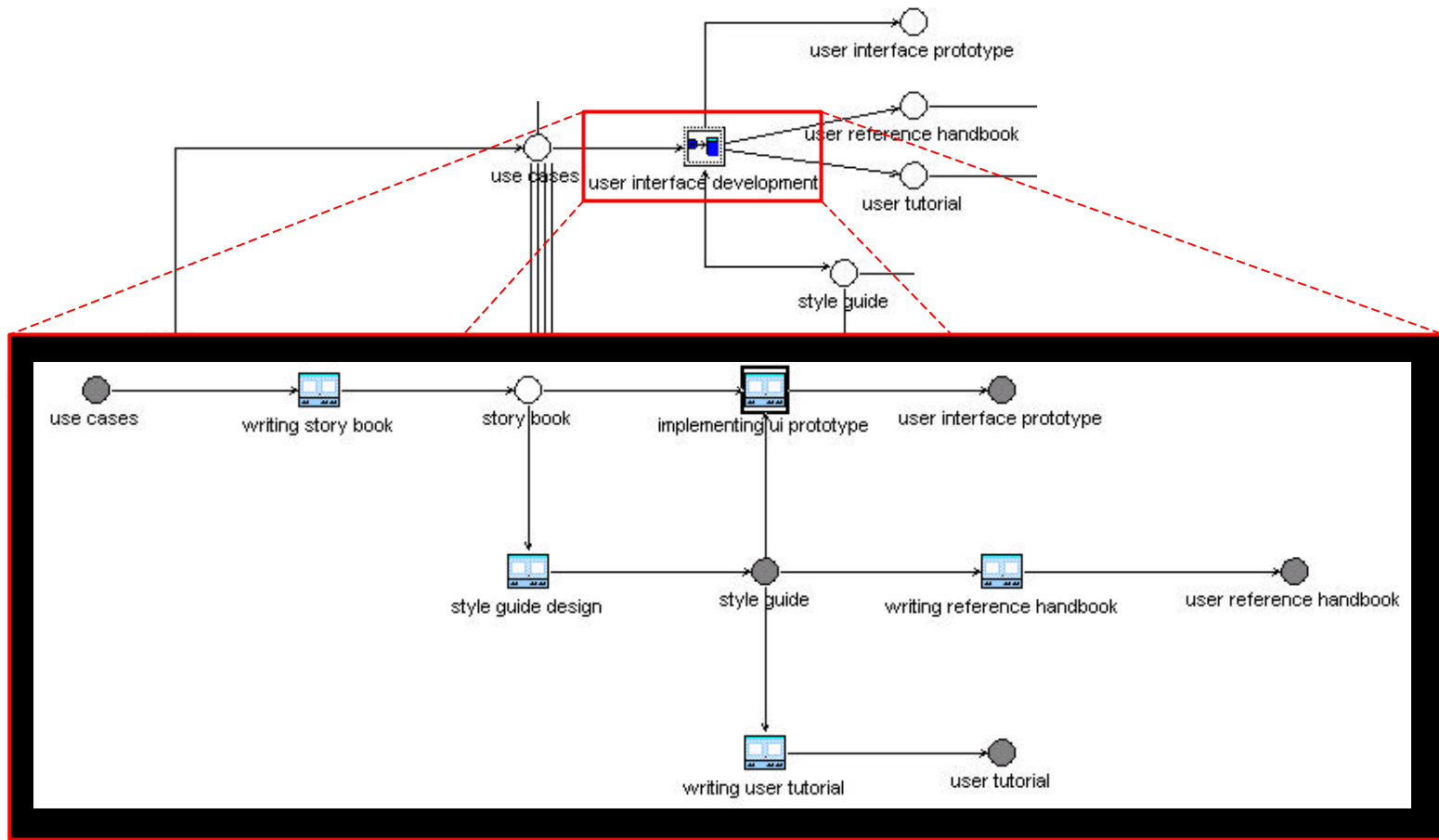
# Prototype Development



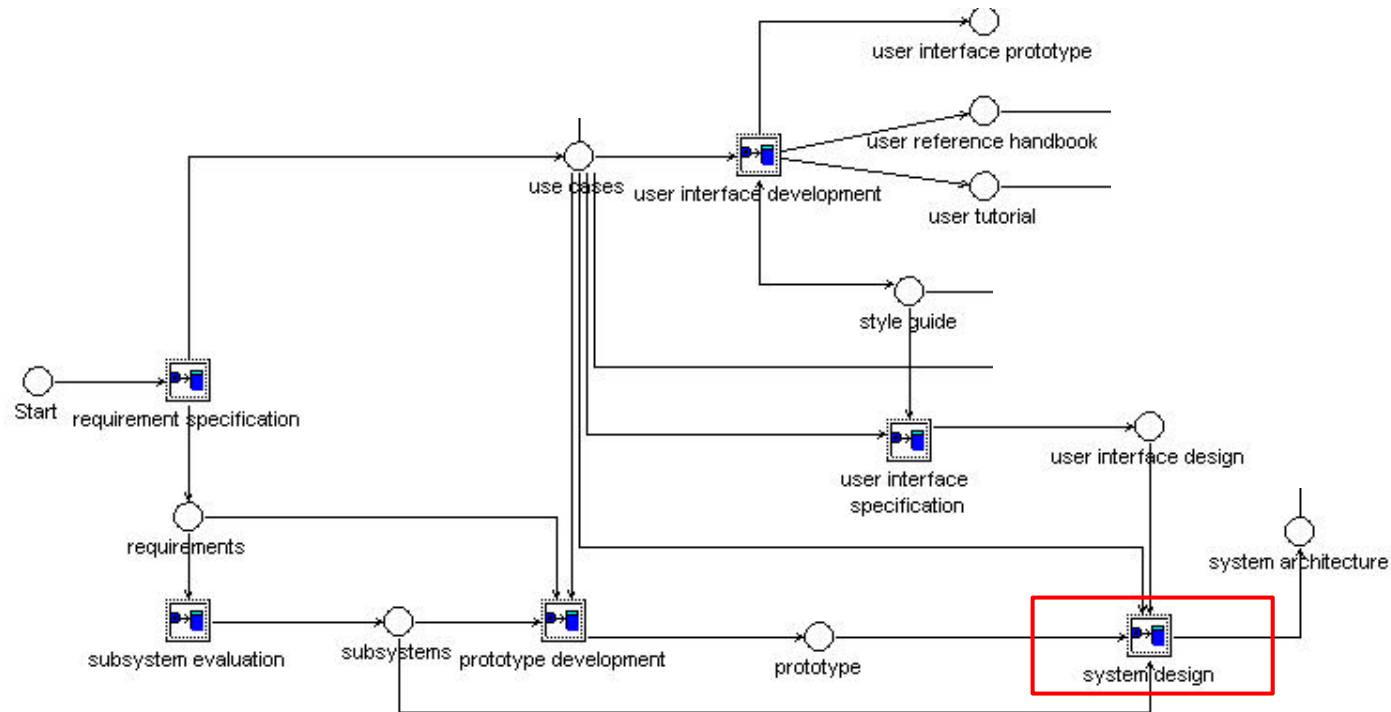
# Software Process Model



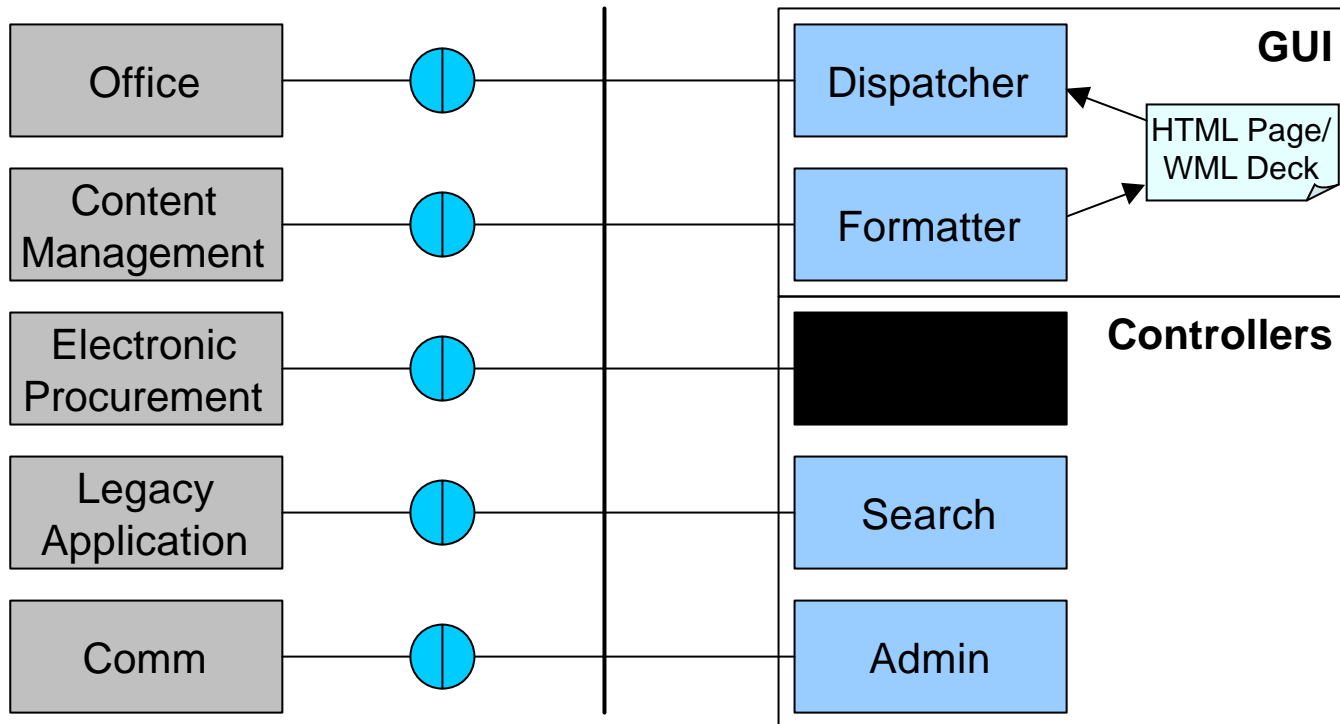
# GUI Development



# Software Process Model



# System Architecture

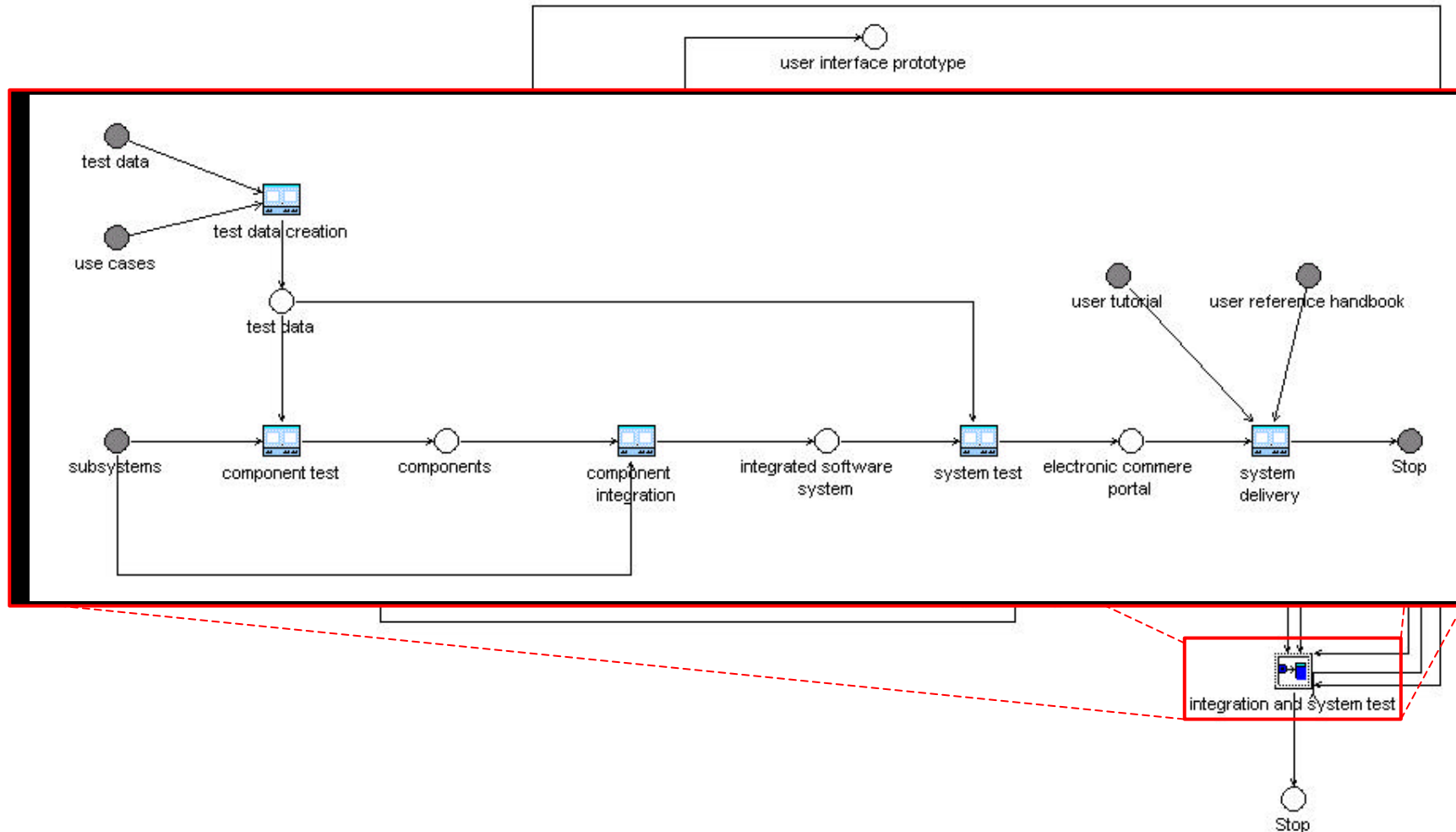


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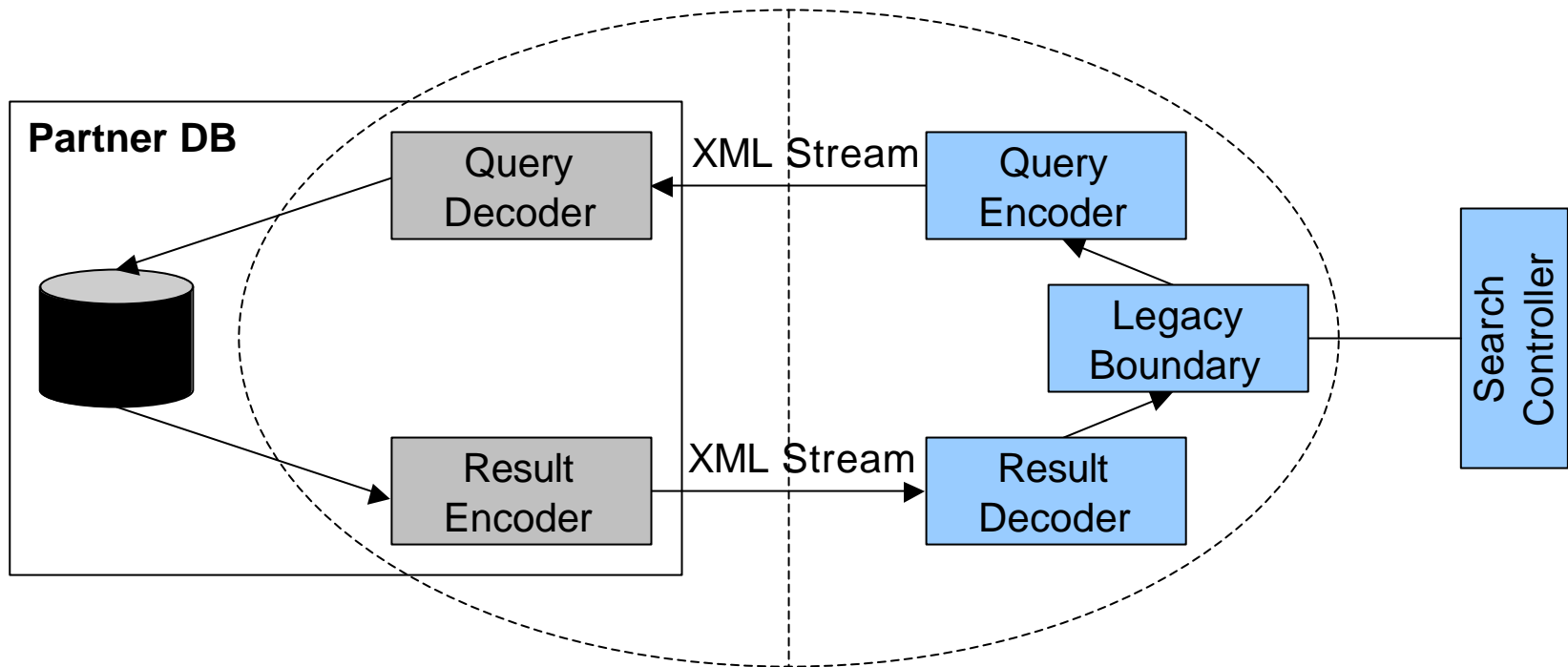
graph TD
    Start((Start)) --> RS[requirement specification]
    RS --> Req((requirements))
    Req --> SSE[subsystem evaluation]
    SSE --> SubSys((subsystems))
    SubSys --> PD[prototype development]
    PD --> UB((use bases))
    PD --> UID[user interface development]
    PD --> SG((style guide))
    PD --> UIS[user interface specification]
    UID --> UIP((user interface prototype))
    UID --> URH[user reference handbook]
    UID --> UT[user tutorial]
    SG --> UIS
    UIS --> UIDesign[user interface design]
    UIDesign --> SysDesign[system design]
    SysDesign --> SA((system architecture))
    SA --> Realization[realization]
    Realization --> SubSys2((subsystems))
    Realization --> TD((test data))
    SubSys2 --> IST[integration and system test]
    TD --> IST
    IST --> Stop((Stop))
  
```



# Integration and System Test



# Example: Legacy Integration





# Testing

- Class Test
  - Class functionality ok?
- Subsystem Test
  - Code review; subsystem boundary ok?
- Integration Test
  - Subsystems' interfaces ok?
- System Test
  - Workflow and GUI ok?





**IPSI - Internet Portal System for Insurances - Netscape**

File Edit View Go Communicator Help


Back Forward Reload Home Search Netscape Print Security Stop

Bookmarks Go to: <http://www.ipsi.de>

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**Internet Portal System for Insurances**

[Nachrichten](#) | [Informationssystem](#) | [Terminkalender](#) | [Aufgaben](#) | [Ticket Center](#) | [Shop](#) | [Anwendungen](#) | [Suche](#) | [Abmelden](#)



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### Persönliche Nachrichten

<a href="#">Termin verschieben?</a>	Michael David	24.02.2000
<a href="#">Meine KFZ-Versicherung</a>	Nicole Falken	24.02.2000
<a href="#">Fahrgemeinschaft zum Seminar?</a>	Karl-Heinz Mayer	25.02.2000

### Informationen

[Neuer Tarif "Leben 2000"](#)  
Im Fachbereich "Leben" wird nächsten Monat der neue Tarif "Leben 2000" eingeführt. Tariftabellen und Informationsmaterial finden Sie hier.

[Tipps für Ihre Jubiläums-Werbeaktion](#)  
Überraschen Sie Ihre Kunden mit persönlichen Grußkarten zu unserem 75jährigen Firmenjubiläum. Hier finden Sie Vorschläge zur Gestaltung und Formulierung.

### Termine

25.02.2000, 15:00	<a href="#">Besuch Eva Schmidt</a>
25.02.2000, 17:00	<a href="#">Meeting Michael David</a>
03.03.2000, 19:00	<a href="#">Jubiläumsfeier</a>

### Aufgaben

bis 25.02.2000	<a href="#">Werbeaktion planen</a>
bis 01.03.2000	<a href="#">Jubiläumskarten schreiben</a>

### Anwendungen

- [Magic Moments](#)
- [Partner und Verträge](#)
- [Provisionierung](#)

### Suche

Suche  in

<input type="checkbox"/> Nachrichten	<input type="checkbox"/> Informationssystem
<input type="checkbox"/> Termine	<input type="checkbox"/> Partner und Verträge
<input type="checkbox"/> Shop	<input type="checkbox"/> Ticket Center

### Ticket Center - aktuell

29.02.2000, 09:00	<a href="#">Info-Veranstaltung "Leben 2000"</a>	DM 140,-
09.03.2000, 10:00	<a href="#">Probabse-Schulung</a>	DM 120,-

### Shop - Sonderangebote

<a href="#">Prospekte "Leben 2000" (200 Stck.)</a>	DM 24,-
<a href="#">Anträge "Leben 2000" (100 Stck.)</a>	DM 10,-
<a href="#">Jubiläumskarten (50 Stck.)</a>	DM 35,-

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Lehrstuhl für Software-Technologie, Fachbereich Informatik, Universität Dortmund

# Conclusion: Experiences

- EC software development process can differ from conventional process in:
  - types of tasks
  - order in which tasks are performed
  - roles that perform tasks
  - software tools used
- especially notable:
  - high effort for subsystem integration



# Conclusion: Software Quality

- Problem:
  - quality-assuring methods can fall prey to time-to-market philosophy
- Partial solution:
  - incremental, iterative prototyping to estimate feasibility, effort and dev. time
- Goal: Model software development process ensuring consistent high quality despite more challenging conditions



***Thank you!***



**Any questions?**